

ABSTRACT

A solenoid that has a small body and increased propulsion in a controlled range is provided.

The solenoid is characterized by being provided with a bearing 40 formed of a nonmagnetic body, n (where n is a positive integer of zero or above) grooves 56 and $n+1$ tooth parts 58 that are adjacent to the grooves 56 and function as magnetic poles being provided in a facing surface 52 of a first upper yoke 54a, m (where m is a positive integer of zero or above) grooves 70 and $m+1$ tooth parts 72, 74 that are adjacent to the grooves 70 and function as magnetic poles being provided in a facing surface 55 of a second upper yoke 54b, $n+1$ grooves 56 and $n+1$ tooth parts 58, 59 that are adjacent to the grooves 56 and function as magnetic poles being provided in a surface 52 of the slider 36 that faces the first upper yoke 54a, and m grooves 76 and m tooth parts 78 that are adjacent to the grooves 76 and function as magnetic poles being provided in a surface 55 of the slider 36 that faces the second upper yoke 54b.